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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,319	06/28/2000	Krishna Seshan	042390.P8490	5476

7590 12/15/2003

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EXAMINER

WEISS, HOWARD

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/606,319	SESHAN, KRISHNA	
	Examin r	Art Unit	
	Howard Weiss	2814	

-- The MAILING DATE of this communication appears on th cover sheet with the correspond nce address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 26-28 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 26-28 ~~is~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Attorney's Docket Number: 042390.P8490

Filing Date: 6/28/00

Continuing Data: RCE established 8/18/03

Claimed Foreign Priority Date: none

Applicant(s): Seshan

Examiner: Howard Weiss

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/18/03 has been entered.

Drawings

2. The drawings were received on 8/18/03. These drawings are acceptable.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 26 to 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong (U.S. Patent No. 6,577,017).

Wong shows all aspects of the instant invention (e.g. Figures 3) including:

- a bond pad **20** of two segments **24,28** with a wire lead **30** attached

- vias **25** and lines electrically connected to said pad segments (Column 1 Lines 34 to 41)
5. Claims 1, 3, 5, 6 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Wark et al. (U.S. Patent No. 6,613,662).

Wark et al. show all aspects of the instant invention (e.g. Figures 3) including:

- a bond pad **92**
- BLM disposed over said bond pad and having segments **80, 82, 84, 86** in close proximity in a polygonal layout and separated by gaps **72, 74, 76 78**
- a bump **88** made of solder, material free of lead or ECA (Column 2 Lines 13 to 15)

In reference to the claim language pertaining to the BLM providing a diffusion barrier to metals, the claiming of a new use, new function, or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); see MPEP § 2112. Since Kim shows all the features of the claimed invention, the ability of the BLM to act as a metal diffusion barrier is an inherent property of Kim's invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
7. Claims 11 to 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wark et al. and Wong.

Wark et al. show most aspects of the instant invention (Paragraph 5) except for the vias and another bond pads. Wong teaches (Paragraph 4) to connect bond pads and vias as claimed to prevent stress induced problems (Column 3 Lines 64 to 66). It would have been obvious to a person of ordinary skill in the art at the time of invention to connect bond pads and vias as taught by Wong in the device of Wark et al. to prevent stress induced problems.

8. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wark et al. and Tadauchi et al. (U.S. Patent No. 6,464,122).

Wark et al. disclose the claimed invention (Paragraph 5) except explicitly having the bump's solder comprises lead-tin and tin-silver-copper. Tadauchi et al. teach (Column 9 Lines 43 to 55) that these solders are well known in the art. Therefore, because these two solders are well known solders at the time the invention was made, one of ordinary skill in the art would have found it obvious to use either tin-silver-copper or lead-tin.

9. Claims 7 to 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wark et al. and the admitted Prior Art Figures 1.

Wark et al. show most aspects of the instant invention (Paragraph 5) except for the bump comprising upper and lower layers, the lower and upper layers of the stated thicknesses. The admitted Prior Art Figures 1 teach to make BLM two layers **14A,B** to secure the bump **15** to the bond pad **11b**. It would have been obvious to a person of ordinary skill in the art at the time of invention to make BLM two layers as taught by the admitted Prior Art in the device of Wark et al. to secure the bump to the bond pad.

Since the Applicant has not established the criticality of the thicknesses stated and since these thicknesses are in common use in similar devices in the art, it would have been obvious to one of ordinary skill in the art to use these values in the device of Kim and Takada et al. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Response to Arguments

10. Applicant's arguments with respect to Claims 1 to 15 and 26 to 28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.

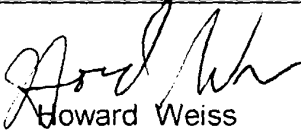
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(703) 308-4840** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via **Howard.Weiss@uspto.gov**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.

13. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/737, 774, 781	thru 12/8/03
Other Documentation: none	
Electronic Database(s): EAST	thru 12/8/03

HW/hw
8 December 2003


Howard Weiss
Examiner
Art Unit 2814